

Meeting/Workshop on the Review of the National Work Plan and Planning the Field Site Visits During the Regional Meetings of the REBYC-II CTI Project



Casa Apostol Hotel,
Calbayog City
13-14May 2015

BFAR/FAO/GEF/SEAFDEC/REBYC-II CTI PROJECT
Report of the TWG Meeting/Workshop Review Accomplishments and Prepare National Accomplishment and Plan of Activities for July-December 2015 and Review of the Draft of the Samar Sea Fisheries Management Plan (SSFMP)
May 13-14, 2015
Casa Apostol Hotel, Calbayog City

INTRODUCTION

1. The TWG Meeting/Workshop was called in preparation for the REBYC-II CTI Project Regional Planning Workshop and Project Steering Committee Meeting. It was held on May 13-14, 2015 at Casa Apostol Hotel, Calbayog City. The meeting / workshop reviewed the accomplishment against the National Workplan from June 2014 to April 2015 and prepare activities and corresponding budgets for October 2015 and onwards. The meeting also identified the different activities to be presented at the Regional Planning Workshop and follow-up LOA for the remaining months of implementation for the consideration of the Regional Field Unit (RFU).
2. The Meeting/Workshop was attended by the National Technical Officer, National Project Coordinator, 12TWG members, 5 Project Technical and support Staffs, and 8 observers/stakeholders. The list of participants is attached in **Annex 1**.

PROGRAM

3. Mr. Rafael V. Ramiscal, National Project Coordinator and Officer-In-Charge of the BFAR-Capture Fisheries Division provided overview of the Meeting/Workshop. He highlighted important agenda that need to follow-up in preparation of the regional Planning Workshop, back to back meeting with Project Steering Committee and other logistics in preparation for the said regional activities meeting. The Provisional Prospectus is attached as **Annex 2**.
4. He personally thanked the Chair and Co-Chair of the TWG for attending the recent Alliance Meeting and asked for understanding for not able to attend the important meeting of the Alliance considering his compulsory attendance to and conflict of conflict schedule on the same of the meeting of Drafting Committee for the Implementing Rules and Regulation (IRR) of RA 8550 as amended by RA 10654 where he is a member of the Working Group.

FEEDBACK OF THE ALLIANCE MEETING, TWG CHAIR/VICE CHAIR

5. Mr. Norberto Berida, Co-chair of the TWG and Prof. Renato C. Diocton who attended the meeting provided a report/feedback of the Alliance meeting that was attended by 8 Local Executives (Mayors Almagro, Calbayog City, Daram, Gandara, Sto. Niño, Sta. Margarita, Tagapul-an, Tarangnan and Zumarraga) and the some of the REBYC-II CTI Technical Working Group. The TWG presented the proposed Management

Plan for Samar Sea, where they provided information on the results of the ichthyoplankton maturity and catch landing survey by municipal and commercial trawls in Samar Sea. They presented for consideration identified spawning months for some pelagic and demersal species as basis for closure. The Mayors highlighted the importance of alumahan/hasa-hasa (Indian mackerel/Short bodied mackerel) as key species considering that their importance as raw materials for smoked fish (tinapa) which is a local value added product for export. It was also recommended to consider providing alternative livelihood program for fishermen, particularly shellfish culture (green mussel and oyster).

6. It was reported that the contentious issue deliberated on by the Alliance identify the spawning and juvenile periods which the close season should cover. The Alliance recommended to the TWG to further deliberate on the matter with the participation of the technical staff from the provincial government. It was also recommended a public hearing/ consultation should be conducted regarding the restriction of commercial fishing boat during the proposed closed season.
7. Mr. Ramiscal commented that the TWG should be very clear and definite with the recommendations on close season with project surveys and other reports as source of scientific data and information.

REVIEW/PRESENTATION OF SPAWNING/MATURITY STUDIES

8. To further deliberate on the basis of the proposed close season, Prof. Renato C. Diocton, Samar State University presented the results of the two studies on bycatch & trawl catch landing survey & assessment, and Ichthyoplankton survey/assessment in Samar Sea conducted in December, 2013 to May, 2014. He provided the summary results particularly on composition and the areal and seasonal distribution of larvae density well as dominant family, the stages of fish larvae, count and the images. His presentation is attached as **Annex 3a and 3b**.
9. Mr. Ronnie O. Romero, Researcher from the National Fisheries Research and Development Institute (NFRDI) and national project staff of REBYC-II CTI, presented the result of GSI and maturity study conducted for one year (2005-2006) during the REBYC-I Project in Samar Sea. He presented the GSI and maturity stages of different species which can be the basis for establishing a close season. His presentation is attached as **Annex 4**.
10. Through a workshop, the potential spawning months of the covered species were determined/ identified based on the above studies (**Annex 5**).
11. The main discussion was on the appropriate timing of the close season, taking into account which should be protected among the breeders, eggs/larvae or the juvenile. It was recalled that during the Alliance meeting, the Mayor of Calbayog City pronounced the need to conserve the juveniles, particularly the roundscads.
12. Mr. Ramiscal explained that available science provides information on the potential spawning months where a close season during this period can protect both the spawners and the eggs/larvae. On the other hand, a lose season or about 2 months after the spawning period may protect the juveniles. However, he warned that a

close season to protect spawner, eggs/larvae and juveniles may require a long period of close season which may have a significant negative impact to sectors dependent on the fisheries.

13. After the discussions, the workshop recommended to propose the timing of the closure in April-July, the length of which will be deliberated by the Alliance in the next meeting, taking into consideration the impact and timing of the said closure.

REVIEW OF THE REPORT OF PH_REBYC II-CTI (to be presented at the Project Planning WS 15-16 May 2015)

14. Dr. Jonathan O. Dickson, NTO presented the draft progress report on the implementation of REBYC-II CTI in Samar Sea for review and comment of the TWG. The report covered the National Work Plan and the major activities accomplished from June 2014 to present that included on critical habitat/fishing ground surveys, fishing ground mapping, cataloguing and inventory of fishing gears, ichthyoplankton study, assessment on trawl bycatch, E-EAFM Training and Workshop, and Socio-economic and Gender Mainstreaming Training/Workshop, TWG regular meetings, Outline of the SSFMP, and the process that was undertaken in the formulation of the fisheries management plan (**Annex 6**).
15. The TWG suggested that the updated second draft of the SSFMP will be presented on the next Alliance meeting on June 27, 2015 to be held in Catbalogan City. Discussions were made on activities that were behind schedule based on the national workplan. It was explained that the delay in the approval/signing of the current Letter of Agreement (LOA2) significantly postponed activities of the project. The TWG suggested to request for extension and request for six (6) months extension due to the late signing of LOA-2.
16. Based on the draft process diagram, Mr. Pol Catarus clarified with the NTO if the stakeholder public hearing/ consultation will be also conducted at the level of Alliance/Council after the REBYC-II CTI TWG final draft. With a positive response from the NTO, it was agreed to revise the flow chart diagram to indicate that after if there are outstanding issues as a result of the public consultation, the plan will go back to the TWG address the concerns and finalized prior to submission to the Alliance.

PREPARATION FOR THE PROJECT PLANNING WORKSHOP (MAY 15-16, 2015)

17. Mr. Ramiscal presented the indicative activities and workplan for remaining activities for LOA2 and proposals for LOA3.
18. For LOA3, a workshop was conducted to identify activities, coverage and estimated budget. The proposed activities were as follows:
 - IEC in all 11 (eleven) municipalities such as: enhance/ capacitate public stakeholders-wide (general) on EAFM thru trainings and seminars,
 - Monitoring and coordination of SSFMP implementation,
 - IEC Materials (brochures, flyers, video production and others,

- Training needs assessment with the target beneficiaries,
- Orientation of SSFMP and guidelines

19. The Meeting reiterated to the TWG members of their attendance as Observers during the Regional Planning Workshop and Project Steering Committee Meeting at Ciriaco Hotel and Marju Krissel Resort.

CLOSING

20. Mr. Norberto T. Berida thanked all the members of the TWG for their active participation and contribution during the two (2) days meeting/workshop. He concluded successful conduct of the meeting in preparing the report and workplans for the remaining activities of LOA2 and proposed LOA3, underscoring that important of these undertaking of the project in improving the fisheries of Samar Sea. He also personally thanked the observers from the LGUs and from other REBYC II CTI participating countries for attending the national activity. He welcomed them to Calbayog City.

Annex 1. The List of Participants during the REBYC-II CTI Technical Working Group Meeting from May 13-14, 2015 at Casa Apostol, Calbayog City

NAME	AFFILIATION
Norberto T. Berida	Training Center Director-RFTC8 & Co-Chair TWG RFTC 8 SSU-MC, Catbalogan City Email : bfar_rftc8@yahoo.com.ph Contact # : 09177057703
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Maridel O. Bulawit	Small –scale Trawl Operator/ Fish Trader Sta. Margarita Contact # : 09157189159
Juan P. Meniano Jr.	PAFC – Coordinator OPA- Samar Contact # : 09209682241
Dionisio A. Balili	CFARMC- Chairman Calbayog City Contact # : 09053432706
Rolando C. Ay-Ay	Provincial Fishery Officer BFAR Catbalogan City Contact # : 09083144813
Angelica T. Realino	Sr. Agriculturist CAO -Calbayog City Contact # : 09093888785
REBYC – II CTI STAFF / RESOURCE PERSONS	

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OBSERVERS	
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Dr. Mala	NTO Thailand

Annex 2. Provisional Prospectus of the TWG Meeting

BFAR/FAO/GEF/SEAFDEC/REBYC-CTI PROJECT TWG MEETING/WORKSHOP ON THE REVIEW OF THE NATIONAL WORKPLAN AND PLANNING THE FIELD SITE VISITS DURING THE REGIONAL MEETINGS OF THE REBYC-II CTI PROJECT

Calbayog City, Samar May 13-14, 2015

PROVISIONAL PROSPECTUS

1. BACKGROUND/RATIONALE

In reference to the incoming Regional Planning Workshop and Project Steering Committee Meeting of the REBYC-II CTI Project “Strategies for trawl fisheries bycatch management” on May 15-16, 2015 and May 18-19, 2015, respectively, it is very significant that the members of the Technical Working Group (TWG), Stakeholders and the National REBYC-II CTI Team will meet and discuss the different activity outputs of the previous National Workplan that has been prepared in Bangkok, Thailand last May 2014 resulting to or under the Letter of Agreement (LOA) 2.

This workshop intends to gather and discuss inputs from the Stakeholders on the accomplishments from June 2014 to April 2015 and important activities to be incorporated in the plan for the months of October and onwards. The workshop will review and finalized the new workplan for the smooth implementation and success of the project. This approach is basically the process to improve the workplan and to arrange other important activities for the said above meeting/workshop.

2. OBJECTIVES

The objectives of the workshop are to review the accomplishment against the National Workplan from June 2014 to April 2015 and discuss other important activities for October 2015 and onwards. The workshop will discuss the schedule of activities during the Regional Planning Workshop and Project Steering Committee Meeting.

3. EXPECTED OUTPUTS

- Reviewed accomplishment based on the National Workplan (June 2014 to April 2015).
- Preparation of new National Workplan for October 2015 to December 2015 and proposed activities for January to March 2016.
- Finalized the schedule of field visits in Tacloban City, Sta. Margarita, Catbalogan City, and vicinities.
- Final briefing of the participants and observers for the scheduled meeting.

4. PROCESS

- The previous National Workplan(June 2014 to September 2015) of the REBYC-II CTI will be reviewed and discussed during the workshop. The TWG members will prepare and provide suggestions and incorporate important activities of the project for the month of October 2015 onwards.
- The group will finalized the selected sites for study and field visits for May 17 and May 19, 2015.
- Other concerns for the project will be discussed.

5. DATE AND VENUE

Inclusive dates: May 13-14, 2015

Venue: Casa Apostol Hotel, Calbayog City

6. PARTICIPANTS

- Fifteen (15) REBYC-II CTI Project Technical Working Group members,
- National Technical Officer,
- National Project Coordinator, and
- 4 Technical Staffs/Secretariat

7. CONTACT PERSONS

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National Project Coordinator, REBYC-II CTI Project

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**TWG MEETING/WORKSHOP ON THE REVIEW OF THE NATIONAL WORKPLAN AND
PLANNING THE FIELD SITE VISITS DURING THE REGIONAL MEETINGS OF THE
REBYC-II CTI PROJECT**

AGENDA

13 May 2015		
AM	Arrival of Participants	
13:00 PM	Registration	Secretariat
13:30	Preliminaries	Secretariat
13:50	Background/ Agenda	Mr. Rafael V. Ramiscal NPC
14:00	Feedback of the Alliance Meeting,	TWG Chair/Vice Chair
14:45	BREAK	
15:00	Review/presentation of spawning/maturity studies	
	- Ichthyoplankton survey and	Prof. Renato Diocion, SSU
	- GSI/Maturity (REBYC I)	Mr. Ronnie Romero, NFRDI
18:00 PM	DINNER	
14 May 2015		
08:00 AM	Preparation for the Project Planning WS 15-16 May 2015 @ Ciriaco)	Mr. Rafael V. Ramiscal NPC
10:00 AM	BREAK	
10:15 AM	Continuation	
12:00 NN	LUNCH	
13:00 PM	Review of the Report of PH_REBYC II- CTI	Dr. Jonathan O. Dickson NTO
15:00 PM	BREAK	
15:15 PM	PH Work Plan for Nov 2015-end of project (BFAR-LOA3/ SSU LOA2)	Mr. Rafael V. Ramiscal NPC
16:30 PM	Closing	Mr. Norberto T. Berida TWG Chair

Annex 3a. Result of the study on Bycatch & trawl catch landing survey & assessment

REBYC-II CTI

REBYC-II CTI project will contribute to more sustainable use of fisheries resources and healthier marine ecosystems in the Coral Triangle and Southeast Asia waters by reducing bycatch, discards and other impacts of trawl fisheries

Renato C. Diocton, Petri Suuronen, Rafael Ramiscal
Trawl and By-Catch Survey, Samar Sea Philippines
Samar State University-Mercedes Campus
Catbalogan City

Background

- The Coral Triangle Region of Southeast Asia is one of the world's most biologically diverse, economically productive and potentially vulnerable marine zones.
- Increasing exploitation pressures and major ecosystem change are particular concern in the region. Also the untargeted capture of fish and non-fish species, commonly called by-catch and discards, is an increasing concern.
- This part of the catch tends to be poorly monitored and less managed but could have an important impact on fishery resources, habitats and ecosystems. In some fisheries and regions, there is an increasing trend towards retention of the by-catch consisting of juveniles and small-sized fish for use as food for human consumption or for utilization as aqua-feed.
- This is therefore a complex issue, requiring resource and biodiversity aspects to be tackled alongside human needs and involving a mix of policy, technical and community support measures.

Strategies for trawl fisheries by-catch management (REBYC-II CTI) – will contribute to the more sustainable use of fisheries resources and healthier marine ecosystems in the Coral Triangle and Southeast Asia waters by reducing by-catch, discards and fishing impact by trawl fisheries.

It is executed by the Southeast Asian Fisheries Development Center (SEAFDEC) and the governments of Indonesia, Papua New Guinea, Philippines, Thailand and Viet Nam, in partnership with the private sectors and relevant national, regional and international organizations. The Food and Agriculture Organization of the United Nations (FAO) is the Global Environment Facility (GEF) agency for the project that will be funded jointly by GEF and the implementing and executing partners. A project inception workshop was organized by FAO and SEAFDEC in Bangkok, Thailand

Materials and Methods

- Project started on the month of October 2013 to March 2014 (on-going up to 2015)
- Two major landing points where identified namely: Catbalogan Port and Calbayog Fish port and Brgy. Burabud Sta. Margarita as secondary trawl landing port.
- Eight researcher/enumerators where oriented on data sampling using NSAP forms and boarded trawl

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Results

Fig 1. Good catch and by-catch in commercial and municipal trawl catch landing in Samar Sea

A grand total of 811,705.42kg for the last six month (October 2013 to March 2014). The commercial trawl catch in Calbayog has 38 % while the municipal 4DR5 in Catbalogan has 45 % and for the Municipal small gasoline trawl catch in Catbalogan and Brgy. Burabud Sta. Margarita has 17 %.

Fig 2. By-catch in commercial and municipal trawl catch landing in Samar Sea

A total of 135,052.14 kg of by-catch of all sampling area. The by-catch in commercial trawl has 41% while the municipal 4DR5 has 48% and the municipal small gasoline in Catbalogan and Calbayog has 11%.

Fig 3. Good catch of trawl fishery in Samar Sea

A total of 676,653.61 kg of good catch for the last six months. Catbalogan 4DR5 contributed about 44% of the catch landing followed by Commercial Calbayog contributed about 35% and next are the Small engine and 4DR5 in Sta. Margarita has contributed 14% and the last was Commercial 4DR5 contributed about 7%.



Fig 4. Catch landing of 4DR5 medium size trawl in Calbayog City

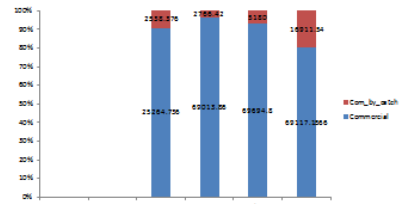


Fig 5 Catch landing of commercial trawl Samar Sea

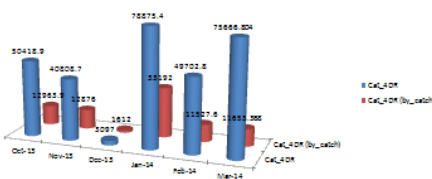


Fig 5. Municipal 4DR5 and by-catch landing in Catbalogan City

A total of 298,481.6 kg of demersal fish caught by trawl was recorded on the month of October 2013 to March 2014. Oct. has 80% of good catch and 20% of by-catch, Nov. has 76% of good catch and 42% of by-catch, Dec. has 65% of good catch and 35% of by-catch, Jan. has 70% of good catch and 30% of by-catch, Feb. has 81% of good catch and 30% of by-catch, Mar. 87% of good catch and 13% of by-catch.

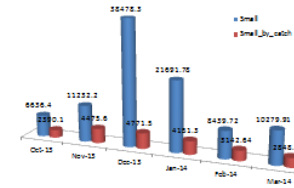


Fig 6. Municipal small trawl catch and by-catch in Samar Sea

A total of 108,112 kg of demersal fish caught by trawl was recorded on the month of October 2013 to March 2014, Catb and Brgy. Burabud Sta. Margarita. Oct. has 74% of good catch and 26% of by-catch, Nov. has 72% of good catch and 28% of by-catch, Dec. has 91% of good catch and 9% of by-catch, Jan. has 84% of good catch and 16% of by-catch, Feb. has 73% of good catch and 27% of by-catch, Mar. has 78% of good catch and 22% of by-catch.

BIOLOGICAL / POPULATION PARAMETERS OF SELECTED SPECIES

Four groups of ova are distinguished in ripe ovaries

Type I (Immature ova): Irregular shape, a few larger ova spherical, translucent, yolkless, nucleus clearly visible

Type II (Maturing ova): More or less spherical in shape, almost opaque. Nucleus not visible

Type III (Mature ova): Spherical in shape; opaque due to deposition of yolk; a clear space present around the periphery.

Type IV (Ripe ova): Ova large and spherical, translucent, a large fat globule present;

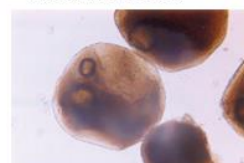
Stage III (Maturing female): Ovary occupying 1/3rd - 1/2nd of the body cavity, eggs visible with the naked eye. Yellow in colour. Ova diameter ranges from 12-33 md with the modal class at 27-30 md.

Stage IV (Mature female): Ovaries occupying 1/3rd - 3/4th of the body cavity. Yellow in colour. Eggs granular and clearly visible in the ovary (Fig. 1b). Ova diameter ranges from 24-45 md with the modal class at 33 md.

Stage V (Ripe female): Ovaries occupying 3/4th to nearly full body cavity. Bright yellow in colour (Fig. 2a). Translucent eggs clearly visible in the ovary (Fig. 2b). Ova diameter ranges from 39 to 71 md with the modal class at 48-51 md.



Ripe ovary of *L. splendens*



Ripe eggs of *L. splendens*

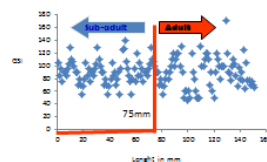
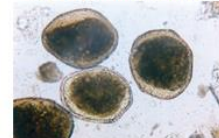
Maturity stages

Stage I (Immature female): Ovaries occupy 1/4th of the body cavity, pale yellow and translucent in appearance. The ova diameter ranges from 2-9 md.

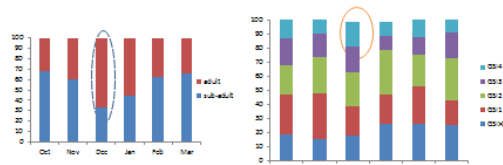
Stage II (Immature female): Ovaries occupy less than 1/3rd of the body cavity. Pale yellow and translucent in appearance. Eggs are slightly visible with the naked eye on teasing the ovary. Ova diameter ranges from 3-12 md with mode at 6 md.

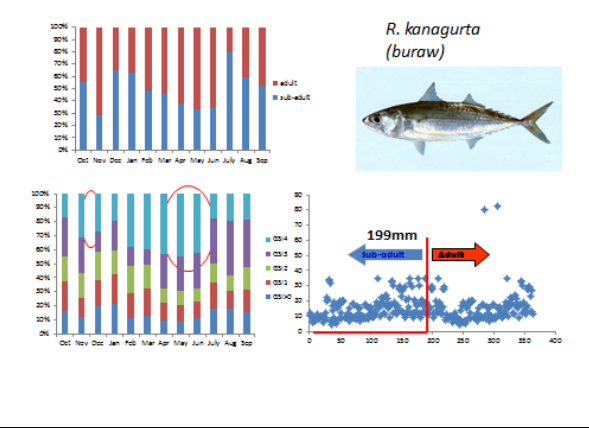
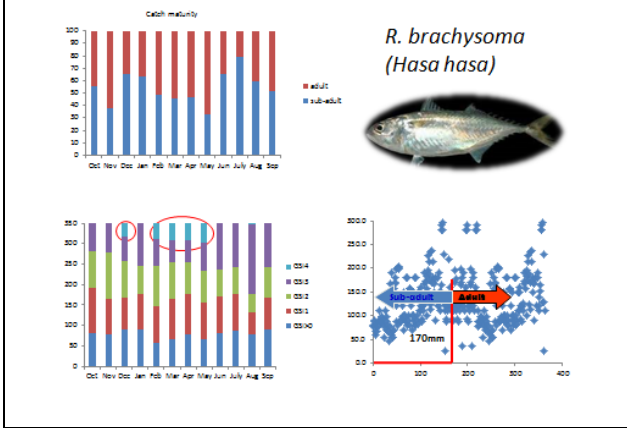
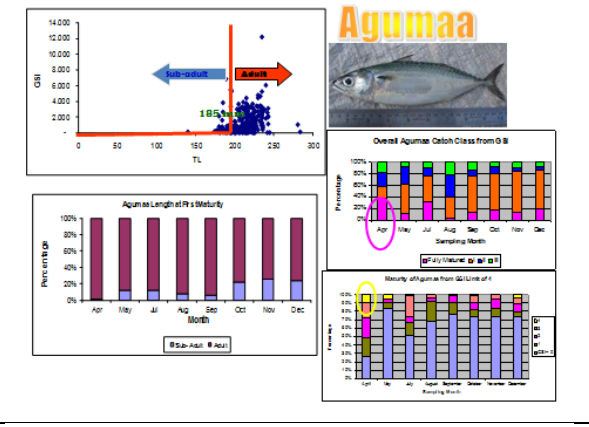
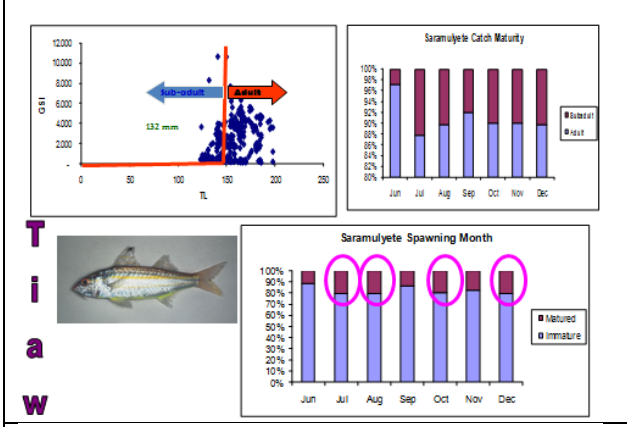
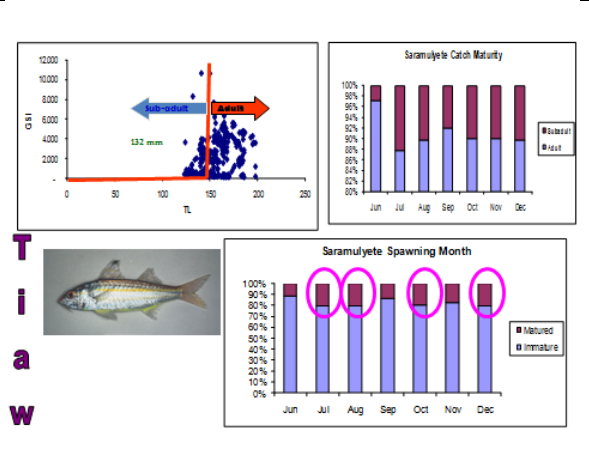
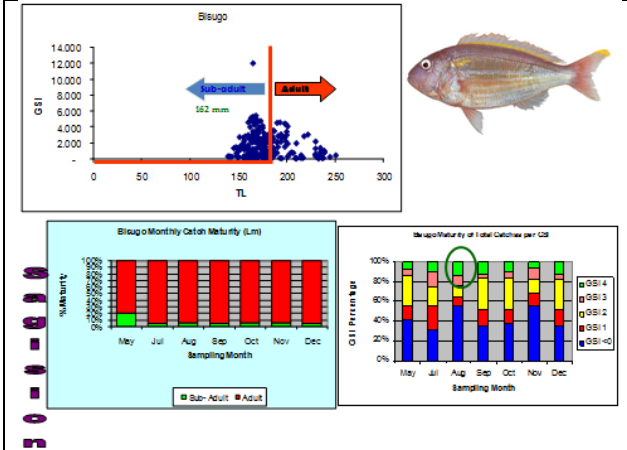
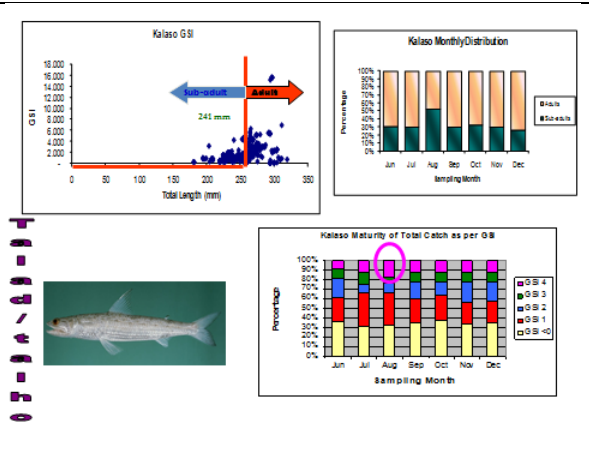
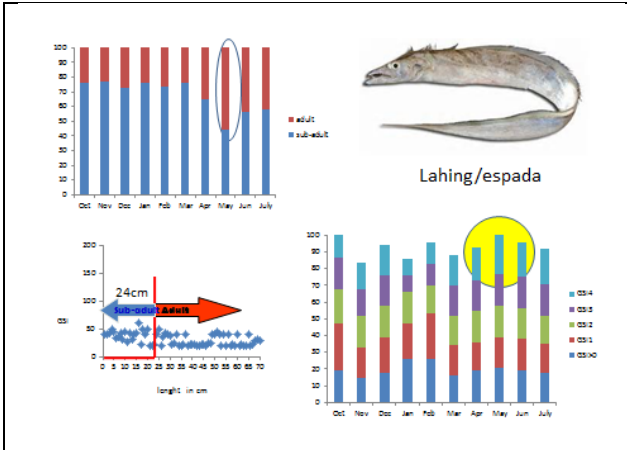


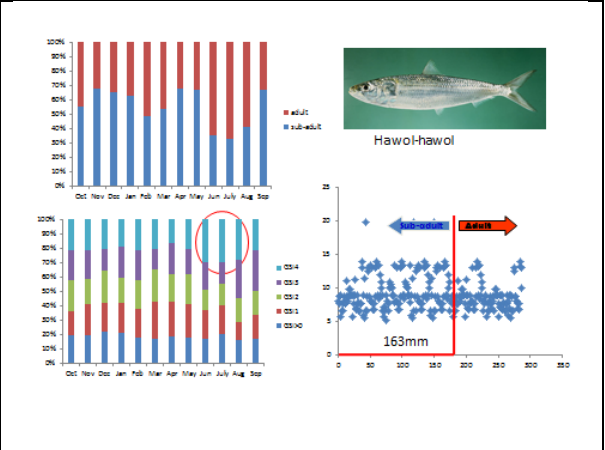
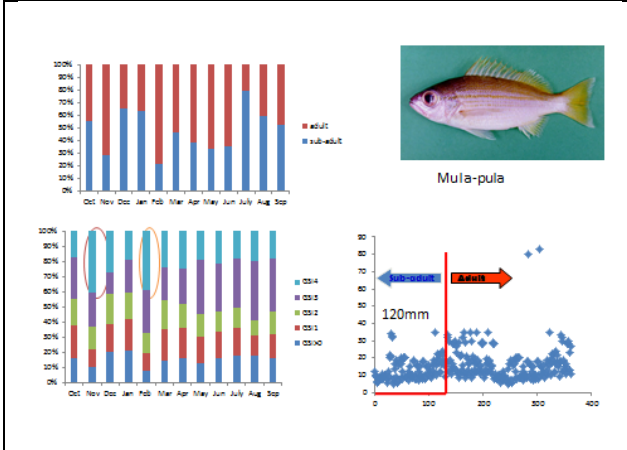
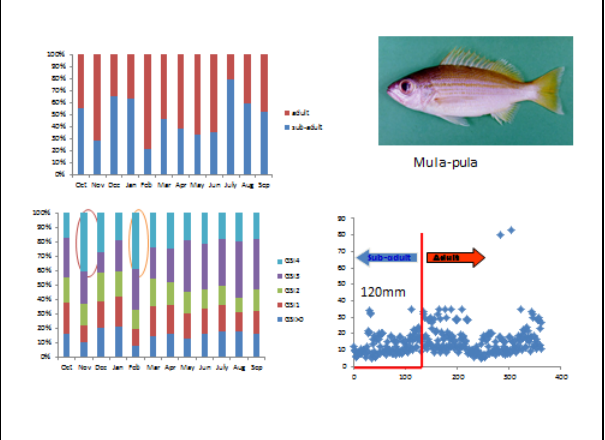
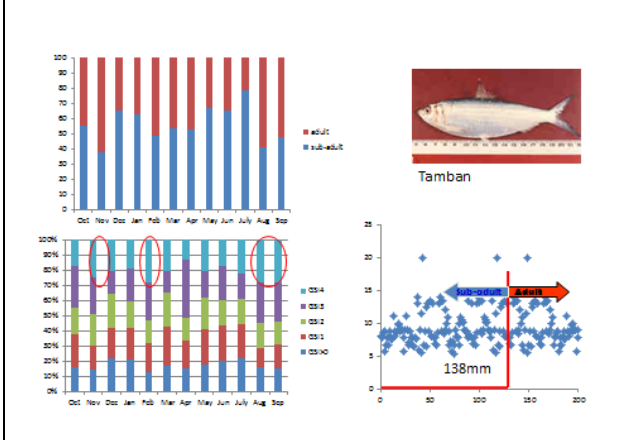
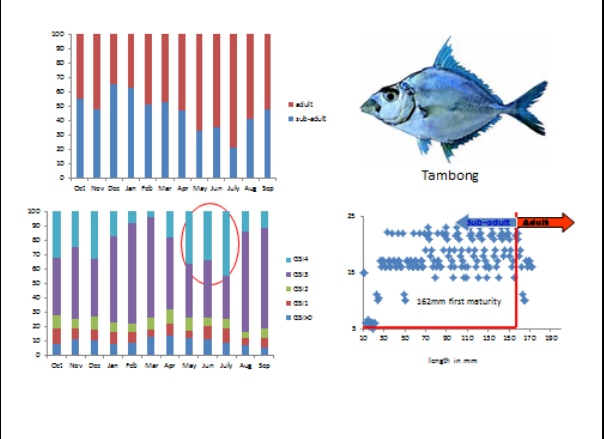
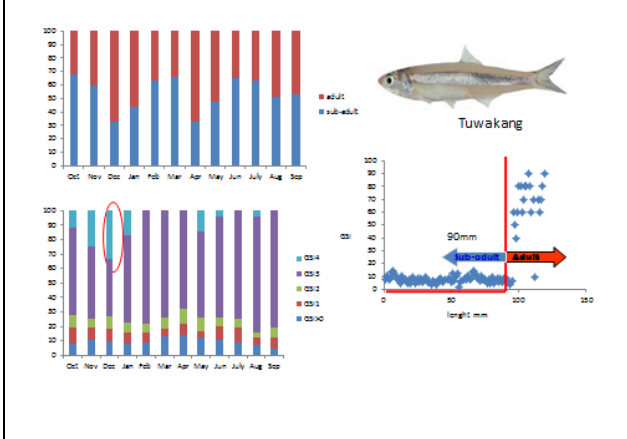
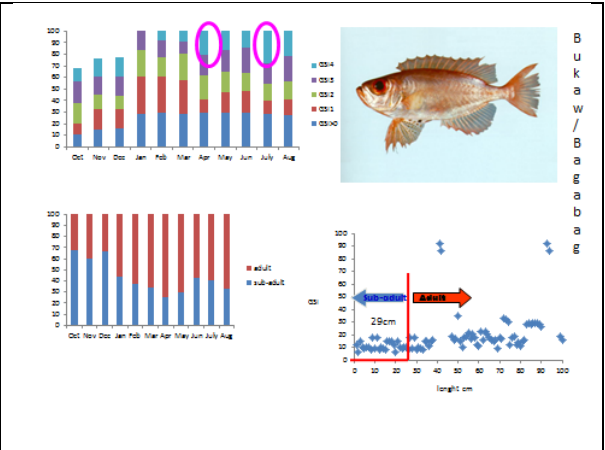
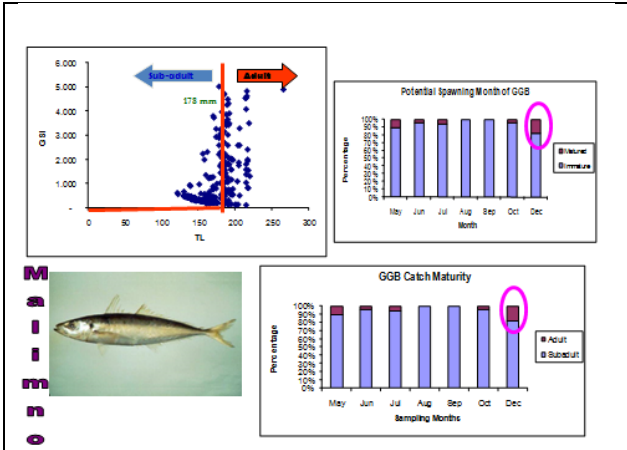
Stage II of ovary of *L. splendens*



Lawayan/sapsap



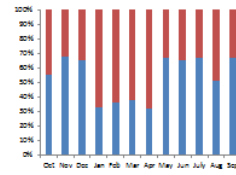




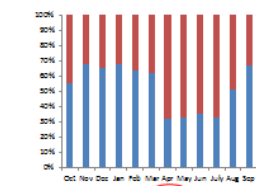
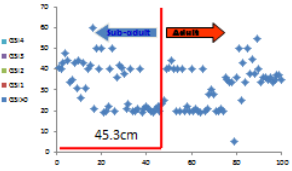


Seri

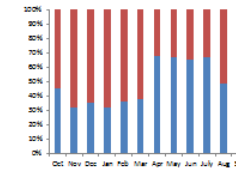
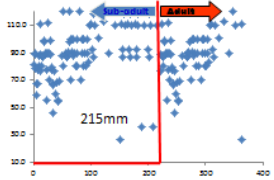
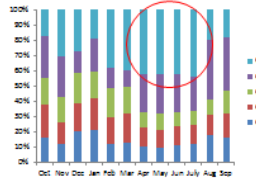
Maturity: L_m 14.7 cm
 Max length : 30.0 cm SL male/unsexed; (Ref. 559); common length : 15.0 cm SL male/unsexed;
 Spawn Dec-Jan/Apr-Aug



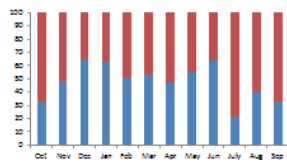
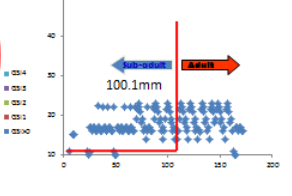
Labongan



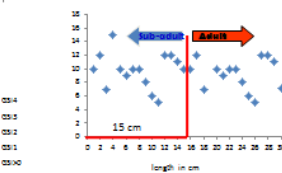
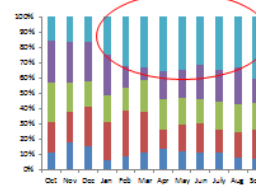
Matang baka



Lambiyaw



Lubas/silag





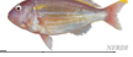


species	Spawning month	Length of first maturity
lawayan	December	75mm
lahing	April May June	24cm
Talad/talho	August	241mm
Sagision/lagaw	August	162mm
Tiaw/intsik	July, Aug, Oct, Dec	132mm
Agumaa	April	185mm
Hasa-hasa	Feb, Mar, April, May, Dec	170mm
Buraw	April, May, June, Nov	19.9cm
Malimno (GG)	December	178mm
Baga-baga	April, July	29cm
Tuwakang	Dec	90mm
Tambong	May, Jun, July	162mm
Tamban	Nov, Feb, Aug, Sept	138mm

- JTEDs are practicable to reduce reject & small fish
- Effort control system works & useful
- Very high probability of capture on most species
- Very high exploitation rates (E) for the commercially important species
- Trawl fishery contributes the bulk of demersal fish landing in Catbalogan City and Calbayog City

Top ten species caught by trawl in Samar Sea from October 2013 to March 2014






Species	Biomass (kg)	%	
1. <i>Leiognathus splendens</i> (Lawayan) spawning Mar, April, May	124,129 Maturity (6cm)	35	
2. <i>Trichurus lepturus</i> (Lahing) June peak, April May, July August	45,007 (30.78 cm)	13	
3. <i>Saurida tumbil</i> (talho/talad) Aug-Oct, spawn throughout the year	36,464 (34cm)	10	
4. <i>Rastrelliger brachysoma</i> (Hasahasa) Mar, April, May June, July, August, Sept.	27,261 (18.5 cm)	8	
5. <i>Upeneus sulphureus</i> (ti-aw/intsik-intsik, don pilas) throughout the year July-Aug	26,059 (13.9cm)	7	

6. <i>Priacanthus tayenus</i> (baga-baga, bukaw) Feb.Mar. Apr.May,Jun,Jul,Aug	22,744 (17.5cm)	7	
7. <i>Stolephorus indicus</i> (tuwakang, bolinaw) throughout the year	22,291 (12cm)	6	
8. <i>Leiognathus equulus</i> (tambong) throughout the year	21,117 (8.4cm)	6	
9. <i>Sardinella fimbriata</i> (tamban) Jan, Feb, Mar	13,593 (14.6cm)	4	
10. <i>Nemipterus hexodon</i> (sagisison, lagaw) throughout the year (Aug)	13,363 (14.4cm)	4	








Catch composition

- A total of 107 species of finfish recorded during the six of sampling months and still on-going.
- Five species of commercially important shrimps were caught by trawl namely: *Penaeus merguensis* (puti), *Penaeus japonicus* (bulik), *Penaeus latisulcatus* (tigbason), *Penaeus monodon* (lokon), *Penaeus semisulcatus* (bulik).





Small shrimps trawler target species

Species	biomass	%	images
<i>Penaeus merguensis</i> (puti)	9,317	55	
<i>Penaeus japonicus</i> (bulik)	260	2	
<i>Penaeus latisulcatus</i> (tigbason)	1,374	8	
<i>Penaeus monodon</i> (lokon)	3,995	23	
<i>Penaeus semisulcatus</i> (bulik)	2,035	12	







By-catch of shrimps trawl

Species	biomass	%	images
<i>Metapenaeus ensis</i> Guludan or "suahe"	579	18	
<i>Metapenaeus endeavourie</i> Bangkigan or "hipon suahe"	28	1	
<i>Trachypenaeus fulvus</i> Bangkigan or "kuakit/bagulan"	12	0	
<i>Octopus neglectus</i> "Tabogok"	124	4	
<i>Miyakea nepa</i> "Manlilitik"/hinlilitik	885	28	
<i>Loligo duvouchelli</i> "No-os"	1,501	48	
<i>Amusium pleuronectes</i> "Tipay"	14	0	

Other crustaceans


Species	biomass	%	image
<i>Portunus pelagicus</i> "Masag"	2,332	84	
<i>Portunus sanguinolentus</i> "Suga-suga"	11	0	
<i>Charybdis feriatius</i> "Kudosan"	406	15	
<i>Podopthalmus vigil</i> "Banguy"	31	1	

List of finfishes caught by trawl in Samar Sea

Scientific name	Local Name (waray-waray)	English Name	Image
1. <i>Acentrogobius caninus</i>	Parog, Magburoho	Goby	
2. <i>Acentrogobius dayi</i>	Parog, Magburoho	Goby	
3. <i>Acreichthys tomentosus</i>	Pakol	File fish	
4. <i>Adionyx cornotus</i>	Turas/bukaw	squirrel fish/soldierfish	
5. <i>Alectis ciliaris</i>	lawihan	pennant trevally	
6. <i>Alectis indicus</i>	tawa-ay	Indian tread fin trevally	

7. <i>Aluterus monocerus</i>	pakol	File fish	
8. <i>Apogon bandanensis</i>	Moong	cardinal fish	
9. <i>Apogon cookii</i>	Moong	cardinal fish	
10. <i>Arothron unimaculatus</i>	botete	dogfish puffer	
11. <i>Atherina hepsetus</i>	gono	silver side	
12. <i>Atherina ovalaia</i>	gono	silver side	
13. <i>Atule mate</i>	Pikay/gila-gila	yellowtail scad	

14. <i>Caesio cunning</i>	Sinaw-an/dalagang bukid	tullier/ceasio	
15. <i>Caranxoides armatus</i>	Talakitok/poron	longfin trevally	
16. <i>Caranx armatus</i>	talakitok	bluefin trevally	
17. <i>Carcharinus melanopterus</i>	pating	reef shark	
18. <i>Centriscus scutatus</i>	sipulsipul	razorfish	
19. <i>Chirocentrus dorab</i>	barila	silver bar fish	
20. <i>Chaetodon schoenienii</i>	bangkolis	butterfly fish	
21. <i>Congresox talabon</i>	ubod	yellow pike conger	
22. <i>Cynoglossus abbreviatus</i>	paled	three lined tongue	

23. <i>Decapterus macروسoma</i>	malinno/galangong	round scad	
24. <i>Dendrochiurus zebra</i>	larong	lion fish	
25. <i>Dussumiera acuta</i>	hilos-hilos	Rainbow sardine	
26. <i>Epinephelus sixfasciatus</i>	tingag	grouper	
27. <i>Epinephelus malabaricus</i>	tingag	grouper	
28. <i>Epinephelus tauvina</i>	tingag	grouper	
29. <i>Fistularia petimba</i>	tubo-tubo	red comet fish	
30. <i>Gerres abbreviatus</i>	baysa	silver biddy	
31. <i>Gerres filamentus</i>	sakalan	whipfin silver biddy	

32. <i>Gerres filamentus</i>	sakalan	whipfin silver biddy	
33. <i>Gnathodons speciosus</i>	lomoan	Golden trevally	
34. <i>Halichoeres chloropterus</i>	lubayan	Green wrasse	
35. <i>Leiognathus brevirostris</i>	bilangbilang	Shortnose ponyfish	
36. <i>Leiognathus equulus</i>	tambong	slipmouth	
37. <i>Leiognathus splendens</i>	lawayan	slipmouth	
38. <i>Lutjanus lutjanus</i>	pula-pula	big eye snapper	
39. <i>Lutjanus monostigma</i>	labongan	one spot snapper	
40. <i>Megalaspis cordyla</i>	Kalapi-on	hard tail	
41. <i>Mene maculata</i>	Tabas	moon fish	
42. <i>Mugil cephalus</i>	Balanak	flathead mullet	

43. <i>Priacanthus tayenus</i>	Baga-baga/bukaw	Big eye scad	
44. <i>Nemipterus bathybius</i>	Sagisison	thread fin bream	
45. <i>Nemipterus hexodon</i>	Sagisison	nemipterid	
46. <i>Nemipterus virgatus</i>	Sagisison	nemipterid	
47. <i>Pampus argenteus</i>	Bitilya	pompano	
48. <i>Parastromateus niger</i>	Sandatan	black pomfret	
49. <i>Pentaptrion longimanus</i>	lubas/silag	Longfin mollara	
50. <i>Pilates quadrirenatus</i>	gablan	grunt	
51. <i>Platycephalus indicus</i>	sunog	Bartall flathead	
52. <i>Plotosus lineatus</i>	lito	Catfish	

53. <i>Pseudorhombus duploiceatus</i>	perad	sandflounder	
54. <i>Rachycentrum canadum</i>	Tasi	Cobia	
55. <i>Rasborella brachysoma</i>	Hasa-hasa	short mackerel	
56. <i>Rasborella brachysoma</i> (small)	Hasa-hasa	short mackerel	
57. <i>Rasborella faughni</i>	agumaa	round body mackerel	
58. <i>Rasborella kanagurra</i>	buraw	mackerel	
59. <i>Sardinella fimbriata</i>	tamban	Fringescale sardinella	
60. <i>Sardinella gibbosa</i>	tamban	Goldstripe	
61. <i>Sardinella longirostris</i>	hawaiiawol	Rainbow sardines	
62. <i>Saurida tumbil</i>	taledtalho	Lizard fish	

73. <i>Sphyræna barracuda</i>	alho	Barracuda	
74. <i>Sphyræna obtusata</i>	alho	Stripe Barracuda	
75. <i>Sphyræna jaena</i>	alho	Barracuda	
76. <i>Sphyræna jello</i>	alho	Pikhandie	
77. <i>Stolephorus buccaneeri</i>	bolinaw(boris)	anohovy	
78. <i>Stolephorus commersonii</i>	bolinaw(paranganon)	Anahovy	
79. <i>Stolephorus indicus</i>	tuwakang	Indian anohovy	
80. <i>Tetrodon immaculatus</i>	bolate	Pufffish	
81. <i>Therapon jarbua</i>	Bogong	grunt	
82. <i>Therapon puta</i>	Bogong	grunt	

83. <i>Triacanthus strigilifer</i>	Baga-baga/bukaw	hornfish	
84. <i>Trichiurus lepturus</i>	lahing	ribbonfish/hairtail	
85. <i>Ulua aurochs</i>	lomoan	trevally	
86. <i>Upeneus moluccensis</i>	tiaw	goatfish	
87. <i>Upeneus sulphureus</i>	tiaw	goatfish	
88. <i>Upeneus tragula</i>	tiaw	goatfish	
89. <i>Upeneus vittatus</i>	tiaw	goatfish	

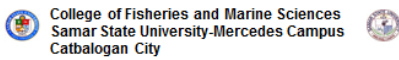
Recommendations

- Adopt JTEDs and square mesh windows in trawl fisheries
- Need to institutionalize guideline on JTED use (Fisheries Administrative Order)
- Enhance effort control system including closed seasons during spawning months
 - August for panghipon
 - April and/or December for palupad
- Biological data especially on maturity should be augmented
- Long term impact assessment necessary including effect on other fisheries, ancillary livelihood and fish supply



Annex 3b. Study of Ichthyoplankton survey/assessment in Samar Sea

Ichthyoplankton distribution in Samar Sea, Philippines



Renato C. Diocton, Petri Suuronen, Rafael Ramiscal



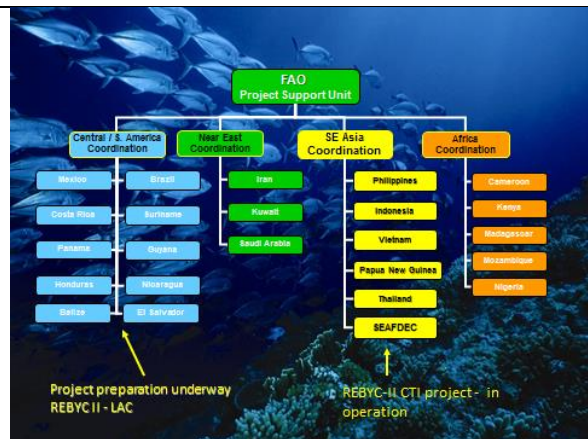
GEF FAO Project REBYC-II CTI
Strategies for Trawl Fisheries By-catch Management

Introduction

- Importance of fish egg survey
 - > To get the estimates of egg abundance.
 - > To determine the success or failure of year broods.
- Importance of fish larvae survey
 - ❖ The larvae of a target species are studied in order to estimate the success of the year brood resulting from its spawn.
 - ❖ To use ichthyoplankton surveys to evaluate fish resources in general.
 - ❖ The surveys are often directed toward a single target species (or a group of closely allied species).

Objective

- To identify and estimate the density, abundance and distribution of eggs, larvae, and small juveniles in Samar Sea.
- To provide data for policy formulation for sustainable management of the resource
- To develop a framework in the context of Essential Ecosystem Approach of Fisheries Management (EEAFM)



THE ISSUES

- Impact of trawl on high-biodiversity ecosystems due to large quantities of low value fish are caught
 - 'trash fish'
 - juvenile fish
 - Growing concern that this catch is
 - reducing the quantity and quality of fish resources
 - threatening sustainability of fisheries
 - affecting livelihoods and opportunities
 - decreasing food security
- ➔ However, not all trash fish or low value fish catches are necessarily non-sustainable!

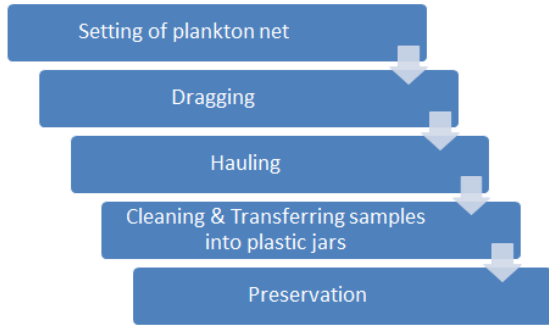


Methods

- Plankton samples were taken with standard plankton net (500µm mesh size of 50cm mouth diameter) w/ flowmeter
- Surface tow were applied in the 18 sampling station distributed along Samar Sea
- Sampled were fixed and preserved using ethanol alcohol.
- Larvae were identified using book reference published.
- Shannon-Weiner diversity index were applied to determine community structure



ICHTHYOPLANKTON COLLECTON



Laboratory procedure

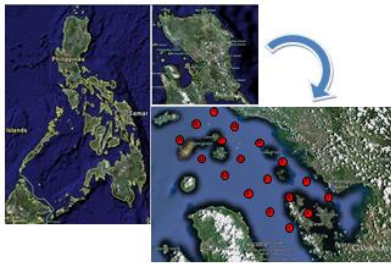
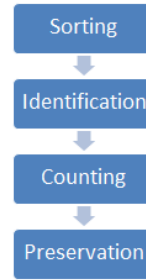


Fig. 1. Study area in the central eastern Philippines, Samar Sea

Table 1. Coordinates of the sampling stations

Station	Latitude	Longitude	Depth (meters)
1	11°43.133' N	124°54.493 E	9.28
2	11°46.560 N	124°50.638 E	20.02
3	11°48.552 N	124°46.499 E	21.84
4	11°45.417 N	124°42.554 E	50.96
5	11°42.593 N	124°41.419 E	70.98
6	11°39.842 N	124°42.293 E	54.60
7	11°35.805 N	124°44.549 E	47.32
8	11°38.531 N	124°49.576 E	27.30
9	11°42.915 N	124°47.876 E	40.04
10	11°52.756 N	124°42.405 E	18.20
11	11°49.846 N	124°38.534 E	61.88
12	11°47.546 N	124°35.726 E	76.44
13	11°53.791 N	124°31.678 E	85.54
14	11°53.275 N	124°34.094 E	63.70
15	11°55.622 N	124°30.836 E	83.72
16	12°02.445 N	124°29.418 E	76.37
17	12°02.406 N	124°33.873 E	32.76
18	11°56.509 N	124°38.819 E	87.36



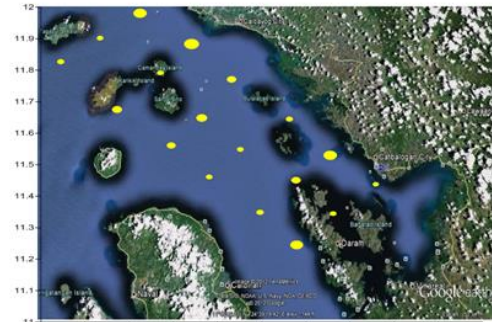
Fish eggs was abundant in stn. 1(1,103), stn 3(2,071), and stn 15 (871), stn 16(2,254), stn 2 (1,154), stn 17 (1,123)



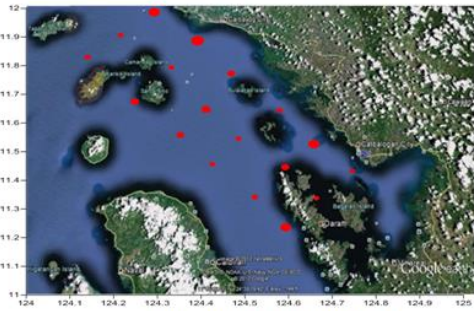
Stn 1, has *Apogonidae* has 9 counts and *Haemulidae* has 4 all were postflexion stages. Density of larvae got in stn 1(4,193) and stn 2(5,091), stn 3(7,456), stn 5(8,145), stn 16(7,731).

Families identified in December 2013

Station	Family	stages	Count	Images
1	<i>Apogonidae</i> <i>Haemulidae</i>	Postflexion	9	
		Postflexion	4	
2	<i>Apogonidae</i> <i>Serranidae</i>	Preflexion/	4	
		flexion	2	
		preflexion	2	
3	<i>Leiognathidae</i> <i>Haemulidae</i> <i>Mullidae</i>	preflexion	5	
			5	
			3	
5	<i>Apogonidae</i> <i>Mullidae</i>	Preflexion	4	
		flexion	3	
			3	
16	<i>Engraulidae</i> <i>Cepolidae</i> <i>Bregmacerotidae</i>	Flexion/pre	4	
		flexion	3	
		Preflexion	8	
		yolksac	3	

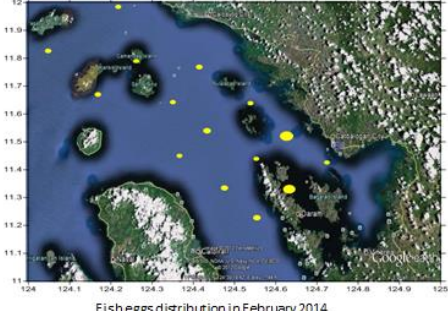


Fish eggs was abundant in stn. 2 (1,471), stn 7 (9,548), and stn 17 (10,371), stn 18 (12,664), Jan 2014



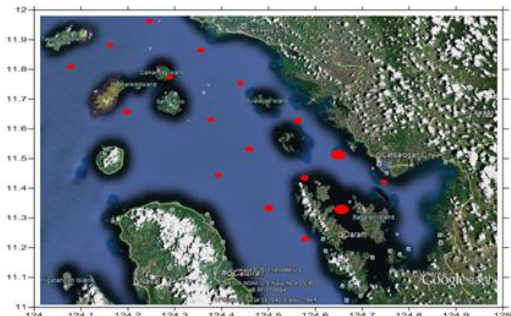
Fish larvae distribution in January 2014

Fish larvae was abundant in stn. 2 (4,654) unidentified, and stn 7 (6,074), Serranidae, Balistidae, Platycephalidae, Sphyrnidae, Mugilidae, Lethrinidae, stn 17 (23,705) Bregmaerotidae, stn 18 (8,442) Bregmaerotidae, Platycephalidae, Sphyrnidae. Jan 2014



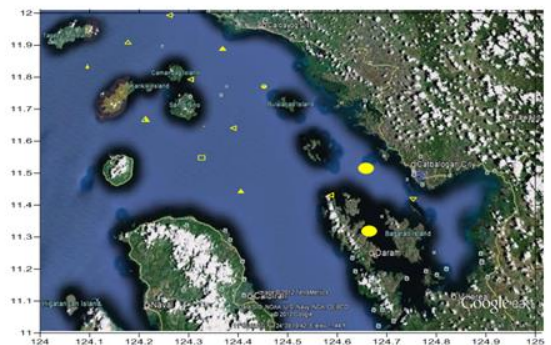
Fish eggs distribution in February 2014

Fish eggs was abundant in stn. 4 (7,141), stn 6 (1,621), and stn 8 (6,234), stn 10 (1,059) stn 16 (136) stn 17 (498). Feb 2014



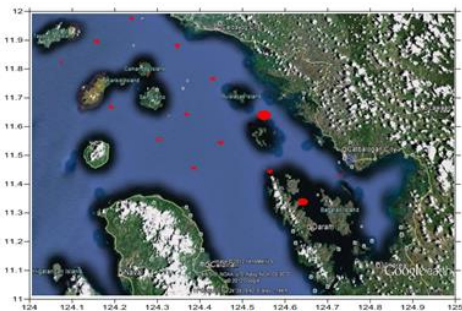
Fish larvae distribution in February 2014

Fish larvae was abundant in stn. 2 (5,193) *Carangidae*, and stn 9 (1,106), *Nemipteridae*. Feb 2014



Fish eggs distribution in March 2014

Fish eggs was abundant in stn. 2 (328), stn 4 (136), and stn 8 (335), stn 10 (98). Mar 2014



Fish larvae distribution in March 2014

Fish larvae was abundant in stn. 3 (492) *Bregmaceritidae*, *Bothidae*, *Carangidae*, and stn 8 (262), *Soleidae*, *Leiognathidae*, stn 14 (60) *Bothidae*. Mar. 2014



Distribution of fish eggs and counts April 2014



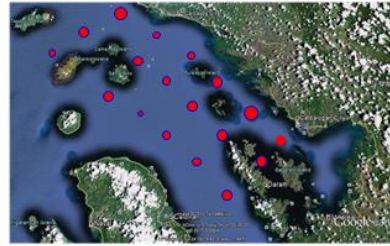
Fish larvae count April 2014



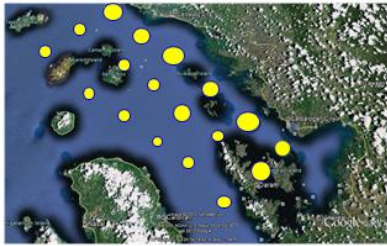
Distribution of fish eggs May 2014



Fish larvae in May 2014



Fish larvae in May 2014

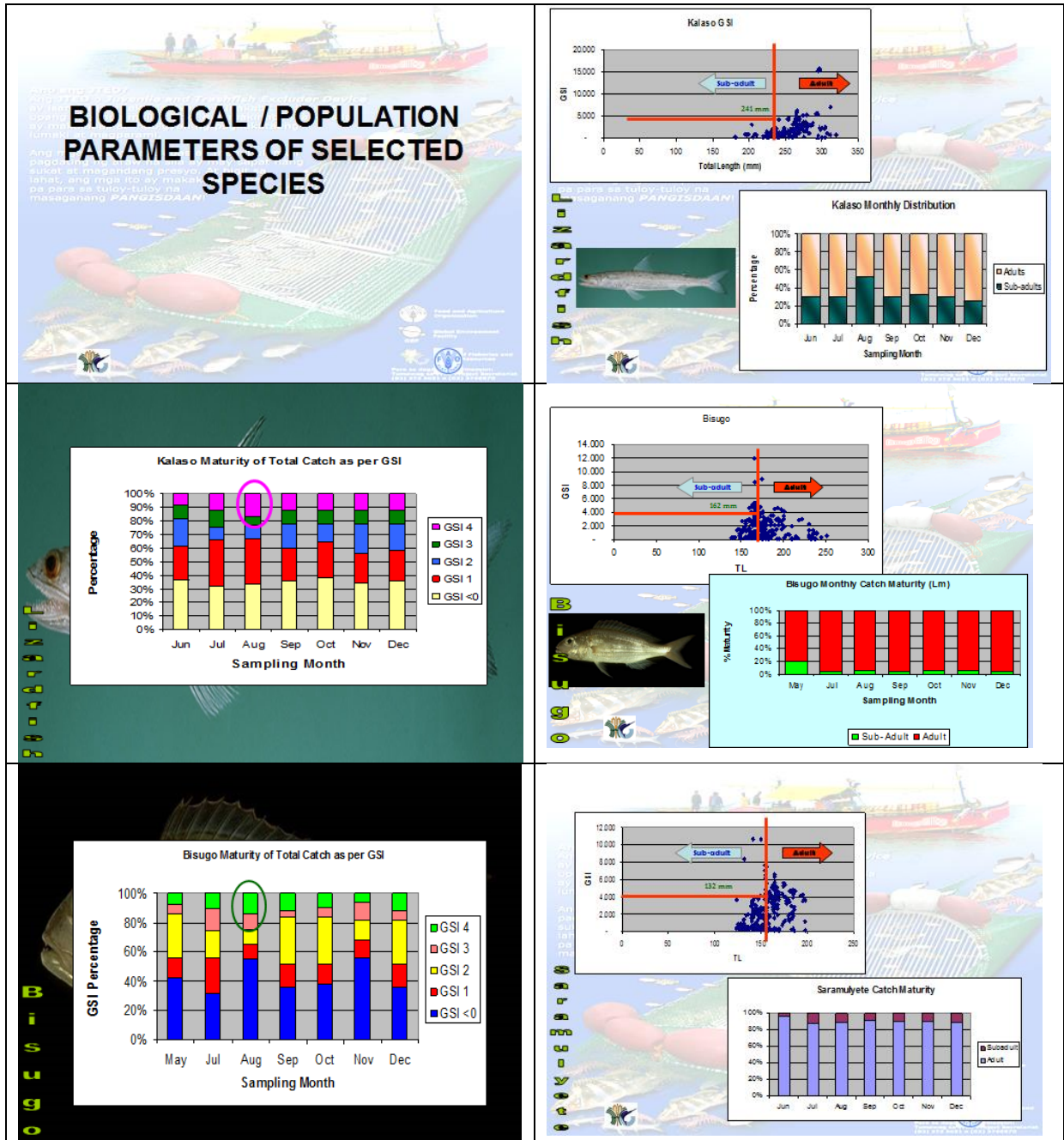


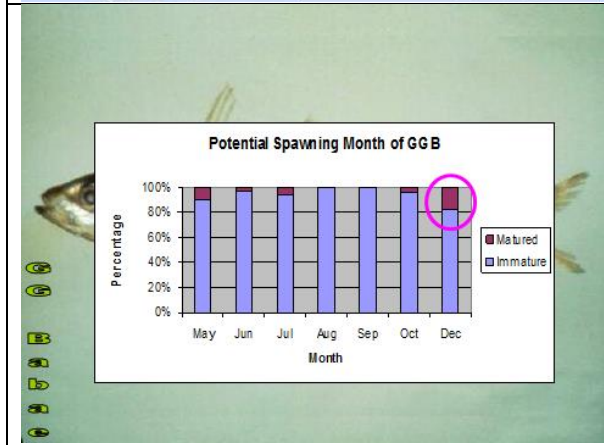
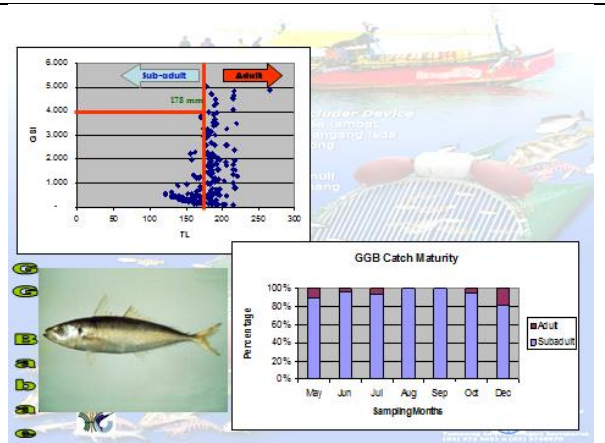
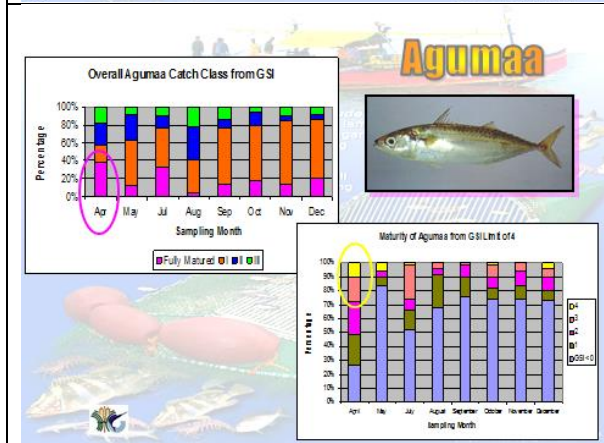
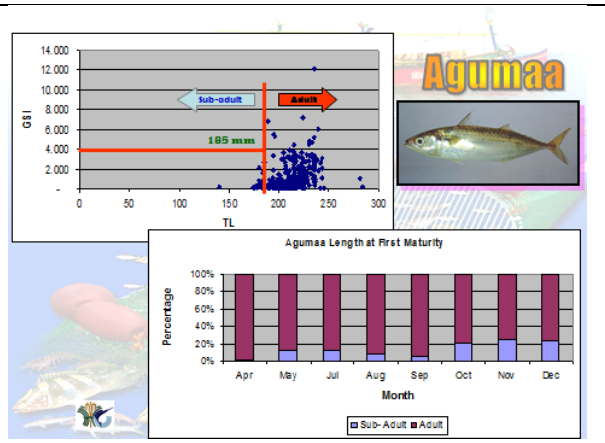
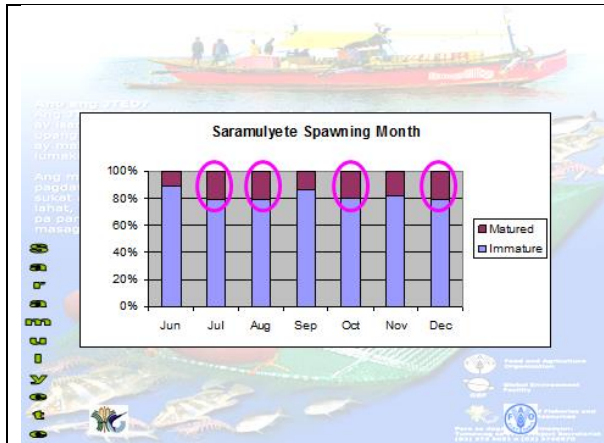
The total counts of fish eggs from the month of December 2013 to May 2014. Station 8 got the highest count 68 (11%) eggs were collected. Followed by station 10 which recorded 63 (10%) count of fish eggs. Followed by station 2 which 61(9%) of fish eggs was collected. Followed by station 17 which collected 51 (8%) fish eggs. And Station 7 which recorded 48 (8%) of fish eggs.



The total counts of fish larvae by stations from the month of December 2013 to May 2014. Station 3 got the highest larval counts 68 individual which a count by dominance of *Bregmaceroidae* of 22 (33%) individual. Followed by station 14 which recorded 62 (26%) individual dominated *Haemulidae*. Followed by station 10 which recorded 56 (21%) individual dominated of both families *Scorpaenidae* and *Sphyrapidae*. On the other hand, Station 1 and 16, which recorded 53 (13,25%) individual dominated by three families *Apogonidae*, *Carangidae* and *Cepolidae*.

Annex 4. Result of GSI and maturity study conducted for one year (2005-2006) during the REBYC-I Project in Samar Sea.





Species	Biological Parameters										Capture Probability			
	Local Name	Scientific Name	L _∞	k	Z	M	F	E	25%	50%	75%	25%	50%	75%
1	Sapsap	Secutor ruconus	330.8	0.2	1.3	0.3	1.0	0.78	1.5	14.8	40.1			
2	Galunggong Babae	Decapterus muriei	310.0	0.3	1.6	0.4	1.2	0.73	99.9	104.9	115.2			
3	Agumaa (Alumahan)	Rastrelliger laevis	288.8	0.4	1.8	0.5	1.2	0.70	149.3	159.6	190.0			
4	Matambaka	Seriola lalandi	278.3	0.6	2.3	0.7	1.8	0.89	121.5	148.9	178.0			
6	Tamban Hilos	Dussumiera acuta	278.3	0.6	2.0	0.7	1.5	0.86	138.8	148.8	154.2			
8	Tiaw	Upeneus sulphureus	204.8	0.9	2.9	1.0	1.9	0.86	59.5	70.5	96.6			
7	Dilat	Prilicanthus laevis	309.3	0.5	1.3	0.7	1.1	0.63	78.1	83.1	90.8			
8	Tamban Yapis	Scorpaenoides commersonianus	204.8	0.7	2.1	0.8	1.4	0.83	139.0	146.8	154.1			
9	Alumahan	Rastrelliger karagutae	268.9	0.6	1.8	0.7	1.1	0.82	149.4	159.7	180.9			

Species	Biological Parameters										Capture Probability			
	Local Name	Scientific Name	L _∞	k	Z	M	F	E	25%	50%	75%	25%	50%	75%
10	Pusit	Lateolabrax exilis	278.3	0.2	0.8	0.3	0.8	0.82	27.4	29.9	37.1			
11	Moong	Apolog fasciatus	267.8	0.3	1.2	0.5	0.8	0.61	1.2	13.2	60.6			
12	Bisugo	Nemipterus spp.	312.0	0.4	1.2	0.5	0.7	0.57	88.8	87.1	83.1			
13	Goby	Tasmanogobius gobioides	173.3	0.4	1.3	0.6	0.5	0.57	7.8	83.4	100.1			
14	Pinya-pinya	Makakapandian	173.3	0.3	1.0	0.5	0.5	0.52	79.0	87.8	98.4			
15	Pakol	Alcanthopoma nigricans	141.8	0.6	1.5	0.8	0.9	0.90	77.5	80.0	87.5			
16	Saramulyete	Upeneus mulcaendis	196.0	0.7	1.5	0.8	0.9	0.48	108.6	116.2	124.1			
17	Langaray	Ambassis ginnocentus	141.8	0.4	1.2	0.6	0.6	0.48	48.5	46.2	63.1			
18	Silay	Nemipterus japonicus	278.3	0.3	0.8	0.5	0.3	0.41	148.3	153.9	161.4			
19	Sunog	Platycephalus indicus	330.8	0.5	0.9	0.6	0.3	0.36	88.1	93.2	102.7			
20	Palad	Psettodes erumei	194.3	0.3	0.8	0.5	0.1	0.18	78.7	85.7	93.9			

Summary / Conclusions

- JTEDS is a viable technical tool in management
- V12 and H15 are practicable devices to reduce reject & small fish
- Effort control system works & useful
- Trawl fishery contributes the bulk of demersal fish landing in Calbayog (especially lizardfish, threadfin bream and hairtail)
- Likely spawning were identified:
 - August -lizardfish (kalaso) and threadfin bream (bisugo)
 - April-May -mackerel (agumaa)
 - July, August, October, December -goatfish (ti-aw)
 - December -roundscad (gg babae)
- Very high probability of capture on most of the species
- Very high exploitation rates (E) for the commercially important species due to extensive fishing pressure (F)

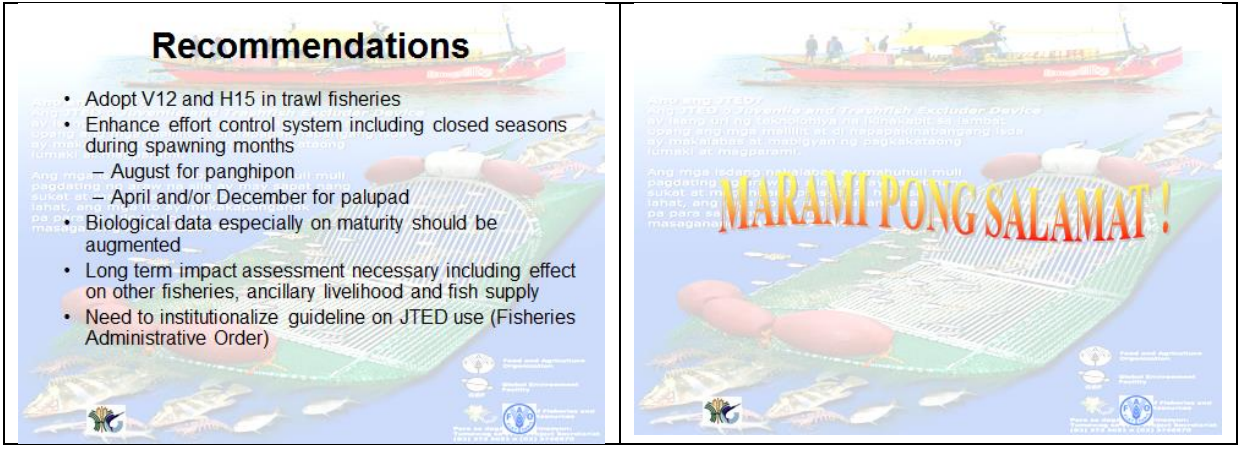
Recommendations

- Adopt V12 and H15 in trawl fisheries
- Enhance effort control system including closed seasons during spawning months
 - August for panghipon
 - April and/or December for palupad
- Biological data especially on maturity should be augmented
- Long term impact assessment necessary including effect on other fisheries, ancillary livelihood and fish supply
- Need to institutionalize guideline on JTED use (Fisheries Administrative Order)

Ang mga JTED (Juvenile and Freshfish Excluder Device) ay isang uri ng teknolohiya na ginagamit sa lambat, pangon, at mga maliliit na isda, kapaligiranang leda, ay mahalaga at mabigyan ng pagkakataong tumakal at magpangon.

Ang mga ledang maliliit na mabuhali mull pagdating ng isda sa lambat, ang mga parehong mabuhali.

MARAMI PONG SALAMAT!



Annex 5. Identified peak month for matured/gravid samples by species

Species	J	F	M	A	M	J	J	A	S	O	N	D
Bisugo								1,2				
Kalaso												
Saramulyete							1,2			1		
Tambong							2					
Baga-baga							2					
Lawayan												2
Agumaa (<i>R faugni</i>)				1, 2	1							
Galonggong												1, 2
Hairtail				2	2							
Hasa-hasa (<i>R. brachysoma</i>)					2							
Burao (<i>R. kanagurta</i>)				2	2	2						
Matambaka (<i>S. crumenophthalmus</i>)							2					

Source :

- 1** Results of study during REBYC 1, 2005-2006
 - 2** Results of landing survey/ichthyoplankton study conducted by SSU, 2013-2014
- Month of high proportion of matured (stage IV-V)
- Anticipated high occurrence of juvenile

Annex 6. Copy of the presentation on the implementation of REBYC-II CTI in Samar Sea for TWG review



**PROGRESS REPORT - PHILIPPINES
REBYC-II CTI PROJECT**

**Jonathan O. Dickson
National Technical Officer
Philippines**

REBYC-II CTI project will contribute to more sustainable use of fisheries resources and healthier marine ecosystems in the Coral Triangle and Southeast Asia waters by reducing bycatch, discards and other impacts of trawl fisheries



PH - National Workplan

	2014					2015														
	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1. MANAGEMENT PLAN IS FORMULATED & ENDORSED BY STAKEHOLDERS																				
Build on science, local knowledge & other information base																				
• Ichthyoplankton survey/assessment (2/0 SSU)																				
• Bycatch & trawl catch landing survey & assessment (2/0 SSU)																				
• Fishing grounds / critical habitat mapping / zoning																				
• Data & information plotted on google maps																				
• Working copy on tracing paper based on nautical chart (NAMRIA)																				
• Final copy on nautical chart (NAMRIA)																				
• Preparation of Catalogue of Fishing Sites of Samar Sea																				
• Socio-economics - Training / WS on indicators & data gathering																				
• Socio-economic - Survey / data collection																				
• Socio-economic - Workshop / WS on results of survey / data analysis																				

PH - National Workplan

	2014					2015														
	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Capacitate LGUs & stakeholders																				
• Capacity Building Training/WS - SSMP for key stakeholders																				
• ICC / Village operations																				
• NAO Meeting																				
• Local Chief Executive (LCE) meetings / JGD/DAO																				
Formulation of voluntary, conflict reduction and other management measures																				
• Participatory rapid assessment on fishing ground / habitat mapping & zoning																				
Preparation/formulation of draft Samar Sea Fisheries Management Plan (SSMP)																				
• TWG workshop to review project data and information inputs & other available data and prepare draft SSMP (outline) of the SSMP																				
• Drafting of SSMP (draft) TWG																				
• Key stakeholders consultation																				
• General public consultation on the draft SSMP																				
• Core-TWG group to finalize SSMP & implementation guidelines																				
• Action planning with stakeholders on SSMP & implementation guidelines																				

PH - National Workplan

	2014					2015														
	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2. FISHERIES RESOURCES ARE SUSTAINED																				
Establishment & operationalization of monitoring scheme (logbook/observer/CPUE-landing survey/trawl survey; socio-economic indicators)																				
Regular consultative meetings / project progress monitoring (TWG operations/Consultative meetings)																				
Integration of implementation with to Local Management Council (Samar Sea Alliance of LGUs for Fisheries Management and Development/SSAMUC)																				

PH - National Workplan

	2014					2015					2016																													
	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC								
3. FISHING OPERATIONS AND ALTERNATIVE LIVELIHOODS CONTINUE TO PROVIDE FOOD IN A SUSTAINED FISHERY																																								
Livelihood needs assessment & planning																																								
Training/capacity building on livelihoods																																								
Provision of livelihood or other economic incentives/assistance																																								

LOA1 Mar 2013-Feb 2014

LOA2 as planned per Planning WS 2014

LOA3 as per Planning WS 2014

Actual as per approved LOA2

LOA2 to be processed for Planning WS 2015

- ### MAJOR ACTIVITIES (JUNE 2014-present)
1. Critical Habitat & Fishing ground mapping / zoning
 2. Fishing gear cataloguing
 3. Ichthyoplankton and trawl catch/bycatch assessment
 4. E-EAFM Training/WS
 5. Socio-Economic Survey and Gender Mainstreaming Training/Workshop
 6. Socio-economic survey/profiling (trawl & others gears)
 7. Coordinating/ Networking with Samar Sea Alliance of LGUs
 8. TWG and Stakeholders Consultation/ Meetings
 9. Drafting of the Samar Sea Fisheries Management Plan (SSFMP)

Critical Habitat Survey

- ❖ Covered 19 sites in 6 municipalities/cities.
- ❖ 3.4 hectares estimated total area surveyed
- ❖ 8,500 M² covered by Line Intercept Transect (LIT) Method
- ❖ Coral cover ranged from 20% to 60%
- ❖ Dead coral cover ranged from 5% to 60%.
- ❖ Fish density estimates ranged from 0.08 to 1.1 fish/m².

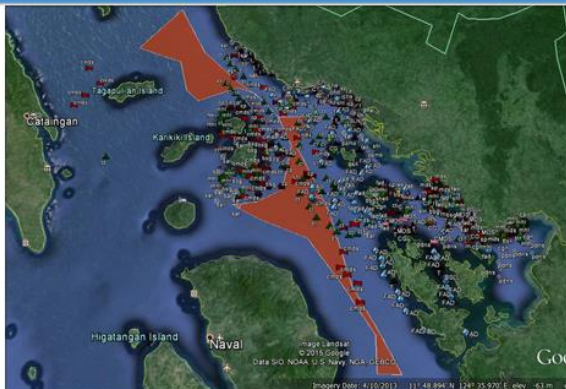


Fishing Ground Mapping

- ❖ Identified 27 different commercial and municipal fishing gears at different fishing grounds (including miscellaneous fishing gears and FADs,
- ❖ Ongoing mapping on nautical chart.



Fishing Ground Mapping



Cataloguing & Inventory of Fishing Gears

1. Inventory of trawl and other fishing gears (11 cities/municipalities)
2. Review and reports consolidation
3. Preparation of catalogue; gears/methods illustrations/lay-outs



Study on Ichthyoplankton

1. 18 Sampling Stations established and collected samples
2. Families of fish eggs and larvae distribution was identified (*Apogonidae*, *Haemulidae*, *Mullidae*, *Engraulidae*, *Cepolidae*, *Bregmacerotidae*, *Serranidae*, *Leiognathidae*, and *Lutjanidae*)



Assessment on Trawl Bycatch

1. Conducted and established biological/population parameters (GSI) and Exploitation rate of dominant fish catch (ponyfish, hairtail, saurida, nemipterids, goatfish, mackerels, roundscad, big-eye scad, anchovy, and sardines)
2. A total of 107 species of finfish recorded, a grand total of 811,705.42 kgs caught landed by Municipal & commercial (Calbayog-38 %, Catbalogan-45 %, and Sta. Margarita -17 %).
3. Five species of commercially important shrimps were caught (*Penaeus merguensis*, *P. japonicus*, *P. latisulcatus*, *P. monodon*, *P. semisulcatus*).

E-EAFM Training/WS

1. 45 participants from local and national stakeholders
2. Identified key issues/challenges, threats & solutions relevant to trawl and associated fishers in Samar Sea;
3. Identified key stakeholders for the consultation of the SSFMP
4. Improved stakeholders understanding on the principles of EAFM /co-management
5. Improved skills for effective communication, facilitation and conflict management.



ESSENTIAL ECOSYSTEM APPROACH FISHERIES MANAGEMENT (E-EAFM)
July 14-15, 2014 at BFAR-RFTC Catbalogan City, Samar, Philippines.

Socio-economic and Gender Mainstreaming Training/WS

1. Identified basic data /information relevant to socio-economic and gender for management of Samar Sea (for trawl & other gears)
2. Identified information gaps and how these are gathered through participatory and other approaches
3. Formulated socio-economic survey form/guide for trawl fishery and other gears
4. Capacitated 42 participants-stakeholders (LGU officers, SSU, Researchers, and operators/fisherfolk, BFAR field officers)



Regular TWG and Key Stakeholders Meetings

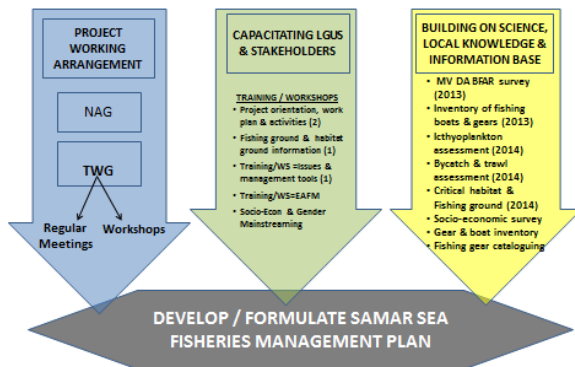
1. Regular TWG meetings to coordinate and monitor project activities
2. Attendance to regular meetings of the Samar Sea Alliance of LGUs .
3. Reviewed and updated results of the inventory of fishing gears & methods, critical habitat & fishing ground mapping, and the socio-economic survey.
4. Monitor initial output of socio-economic survey
5. Outlining/drafting of the Samar Sea Fisheries Management Plan (SSFMP)
6. Consolidated and agreed on the additional inputs in the draft management plan by the TWG Members in the previous meeting.
7. Agreed on the process flow in the establishment of SSFMP.
8. Presented the SSFMP to the Samar Sea Alliance Group for comments and recommendations during the Alliance Quarterly meeting.



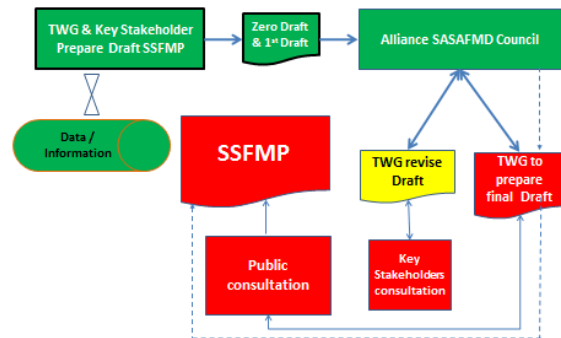
Outline of EAFM of SSFMP

- I. Title
- II. Goal
- III. Background
 - > Fishery and Aquatic Resources
 - > Fishing Ground
 - > Fishing Boats and Gears
 - > Critical Habitat Survey Areas
 - > Fishing Ground Mapping
 - > History of Fishing and Management
 - > Status of Fishery Resources
 - > Trawl Catch and Composition
 - > Studies of Ichthyoplankton and
 - > Studies on Bycatch Reduction Device
- IV. Socio-economic benefits of the fishery, including postharvest
 - > Fishery
 - > Stakeholder
- V. Management
 - > Management objectives, benchmarks and performance measures

WHAT HAVE BEEN DONE ?



WHERE ARE WE ?



Thank You...